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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/659,202

09/10/2003

Tery John Evans

2003P08454 US

5586

7590

05/04/2006

Elsa Keller  
Siemens Corporation  
Intellectual Property Department  
170 Wood Avenue South  
Iselin, NJ 08830

EXAMINER

LEJA, RONALD W

ART UNIT

PAPER NUMBER

2836

DATE MAILED: 05/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/659,202

**Applicant(s)**

EVANS ET AL.

**Examiner**

Ronald W. Leja

**Art Unit**

2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

The following Rejections have been maintained from the previous Office Action of 8/3/2005.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 10, 30, 34 and 37 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Leppo (5,744,939).

See Figure 3 and protecting a battery.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2, 5, 11, 35 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leppo in view of Chu et al. (US 2004/0070495 A1).

These set of Claims are drawn to use of an ASIC circuit. Leppo does not appear to disclose use of an ASIC. However, Chu et al. teach the use of an ASIC circuit wherein temperature compensation of a sensor is also accomplished. It would have been obvious to implement some or all of the circuitry into an ASIC so as to save in space constraints and lower the number of necessary components, thereby streamlining the overall product.

Claims 3, 6-9, 12-15, 31-33, 36 and 39-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leppo in view of Pinckaers (3,817,453).

These set of Claims are drawn to use of an op-amp, and PTC as well as NTC thermistors and whether they are linear or ceramic. Leppo is somewhat silent about such issues. Pinckaers teaches temperature compensation and wherein an op-amp is used and that not only NTC thermistors were used, but that also PTC thermistors are used. It would have been obvious to use an op-amp for the precise gain characteristics, which can be set externally in the feedback, thereby increasing degree of device performance as well as increasing possible applications. It would have been obvious to use a NTC thermistor as a means to dissipate less energy during compensation, as the temperature increases, its resistance decreases. Use of PTC thermistor would have been obvious as a means to also limit the current while still offering compensation, as its resistance increases with temperature rise, and thus, if the fault was other than temporary, limited current would help to increase protection to the load. As far as linear and ceramic, each application and desired degree of precision would affect which characteristic of a thermistor was important. Linearity

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would have been obvious so one would be able to know the approximate level of the sensed current at anytime during sensing of the current, via the resistive response from the thermistor, thereby allowing tracking of system performance for future possible changes. Use of ceramic thermistors allow for a longer shelf-life of the thermistor without corrosion concerns, as there would not be any metals particles, which could oxidize due to humidity, which would also affect results of the compensation.

Claims 16, 18-23 and 25-29 rejected under 35 U.S.C. 103(a) as being unpatentable over Leppo in view of Pinckaers as applied to the claims above, and further in view of Dunk et al. (5,475,371).

Claims 16 and 23 are drawn to use in AFCI environments. Although Leppo offers temperature compensation of a sensed current for battery cell protection, AFCI is not mentioned. In-Spite-Of-The-Fact, it is the opinion of the Examiner that in view of Dunk et al., which teach temperature compensation of a sensed signal for fault detection and protection of a system, it would have been obvious to apply temperature compensation to any fault detecting scheme, such as, an AFCI fault detecting scheme, thereby, minimizing the effect of temperature change upon sensor output, resulting in increased accuracy and reliability of the fault protection scheme. The remaining claims are rejected for the reasons proffered in the rejection above.

Claims 17 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leppo in view of Pinckaers and Dunk et al. as applied to Claims 16 and 23 above, and further in view of Chu et al..

These set of Claims are drawn to use of an ASIC circuit. Leppo does not appear to disclose use of an ASIC. However, Chu et al. teach the use of an ASIC circuit

wherein temperature compensation of a sensor is also accomplished. It would have been obvious to implement some or all of the circuitry into an ASIC so as to save in space constraints and lower the number of necessary components, thereby streamlining the overall product.

Applicant's arguments have been considered, but are not persuasive. Much of Applicant's arguments (see Page 7 of Remarks) hinge upon the allegation that Leppo (5,744,939) does not disclose a temperature compensation circuit that generates a voltage value proportional to the input current where the voltage value is then attenuated by potential changes in the ambient temperature. ... There is no correction for ambient temperature effects to improve accuracy or measurement readings. However, Claims 1, 4, 10, 30, 34 and 37, which in the opinion of the Examiner, have been anticipated by Leppo, do not appear to contain such limitations as argued. The claims do not recite any "attenuating by potential changes in the ambient temperature" or "correction for ambient temperature effects to improve accuracy or measurement readings", and as such, these arguments have no probative value and the Examiner can only maintain the rejection. As far as the rejections of the other dependent claims, many of these claims merely add a component (i.e. circuit is an ASIC) or a property to the component (i.e. thermister is ceramic). However, Applicant offers arguments essentially drawn to "bodily incorporations". The Examiner did not rely upon "bodily incorporation" of References, but rather relied upon "the teachings" from related "Prior Art" and offered reasonable motivation for incorporating such features/teachings, not whether the two or three References could be put together "circuit wise" so as to function as Applicant's disclosed circuitry. For example, Claim 24 adds that the detection circuitry is an ASIC circuit. The Examiner did not

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incorporate the actual ASIC circuit of Chu et al., but rather what the combined teachings of the Prior Art, would have made obvious to one having ordinary skill in the art at the time of the invention. Again, it is the opinion of the Examiner that Applicant's arguments are misdirected, the specific details and supposed complexity found within Chu et al. have no bearing in the application of the teaching of offering an ASIC design as fairly suggested by Chu et al. Claim 24 merely recites "wherein the detection circuit is an ASIC circuit". AN advantage of an ASIC is in space conservation, which is desirable in any engineering design, as such, would have obvious. Applicant's arguments continue along the same direction with the other References utilized in the Previous Office Action, namely not specifically addressing the actual claim limitations found within the instant claims, and as such, are considered to have no probative value.


**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald W. Leja whose telephone number is (571)272-2053. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571)272-2800. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Ronald W Leja  
Primary Examiner  
Art Unit 2836

rwl  
April 29, 2006

